experiments with animals show that compressed air above 5 atmospheres lessens the output of carbon dioxide and lowers the body temperature, and that oxygen at and above 1 atmosphere has the same effect. It is a sign of oxygen poisoning. Compressed air at 10 atmospheres is more damaging, at least to small animals, than oxygen at 2 atmospheres. It increases the loss of body heat, because it is a better conductor and because it is saturated with moisture. The saturation of the air in caissons with moisture does not prevent evaporation from the body, because the skin temperature is higher than that of the air, and the wet air increases the heat loss by dampening the clothes or fur. Highly compressed air may possibly interfere with the diffusion of carbon dioxide from the alveolar air, and may, owing to increased friction, hinder the passage of air in and out of the air-tubes. The nitrogen output in dogs is not altered in any noteworthy degree by exposure to 8 atmospheres for six hours. Inflammation and consolidation of the lungs are produced by exposure to 8 atmospheres for twenty-four hours, or to 1.5 atmospheres of pure oxygen; and the higher the oxygen tension the more rapidly the inflammation ensues. It does not seem likely that inflammation of the lungs is produced with the pressures and length of exposure usual in caissons. The cause of caisson sickness is the escape of gas bubbles in the bloodvessels and tissue fluids during decompression, but recompression causes them to go into solution again, and if it is applied quickly enough the circulation rebegins. After death following rapid decompression, the bubbles can be seen in the bloodvessels, heart, retinæ, aqueous humor, connective-tissue spaces, and elsewhere, and the alimentary canal is blown out with gas. The varying symptoms of caisson sickness are due to the varying seat of the air emboli. Owing to the elasticity of their tissues and to the greater facility for collateral pathways of circulation, young men escape the sickness, so that by choosing suitable men and regulating carefully the periods of compression and decompression, caisson and divers' sickness can be avoided. Gradual decompression is most important, and, provided two hours are spent in decompression, animals can safely be exposed to 8 atmospheres for four hours.

Factors which Determine the Local Incidence of Fatal Infantile Diarrhœa.—DR. H. MEREDITH RICHARDS (*Journal of Hygiene*, July, 1903, p. 325) calls attention to the fact that the various problems of infantile mortality are, with the continued fall in the birth rate, calculated to assume even greater practical importance in the near future, and that of these problems none is more in need of solution than the exact etiology of infantile diarrhœal diseases. He discusses the influence of methods of feeding, seasonal incidence and meteorological relations, influence of social status, physiography, pollution of the soil and its effects, and concludes that fatal infantile diarrhœa is usually a form of food-poisoning; that infection usually takes place at the home; that urban conditions are chiefly hazardous from the amount of polluted soil found in the roads and yards of urban districts; that infinite care is needed if babies are to be hand-fed in towns; and that practical preventive measures should include (*a*) impermeable roads with efficient channelling, (*b*) copious swilling of roads, (*c*) education of mothers as to the necessity of scrupulous cleanliness, (*d*) the co-operative or municipal provision of specially prepared modified milk, which should be sterilized during the diarrhœal season, (*e*) a more efficient control of the milk trade, with special reference to the provision of cooled, approximately sterile milk from healthy cows, and (*f*) the provision of houses which shall be sufficiently convenient to allow of their being cleansed with the least possible expenditure of energy.

Dr. Arthur Newsholme (*Public Health,* August, 1903, p. 654) asserts that much of the relative immunity from diarrhœa at Brighton, England, in 1902, was due to the rainfall, for frequent rains during the summer weeks, even though the total fall be not great, is one of the most effectual means of keeping down the diarrhœa death rate. The obvious course to pursue is, then, in time of drought, to replace the natural scavenging of rain by municipal scavenging; that is to say, by wetting the dusty streets, thus converting the dust into mud, and gathering and removing the mud, rather than merely sprinkling water to lay the dust. With regard to soil temperatures at a depth of four feet, which are regarded as an important index of the possibility of prevalence of epidemic diarrhœa, he shows that Ballard's rule that diarrhœa must be expected when the soil temperature at a depth of four feet reaches 56° F. is fallacious, for on June 24th the temperature was 56° F.; on June 30th it was 58.4° F.; during the second half of July it was between 60° F. and 61° F.; in August it reached 61.8° F.; on September 10th it reached the maximum, 62.6° F., and then, slowly falling, it kept above 56° F. until October 19th, when it dropped to 55.8° F.; but no deaths occurred from diarrhœa, and, contrary to the rule, the highest number of deaths from diarrhœa occurred three weeks later than the week in which the soil temperature attained its mean weekly maximum. "The temperature conditions were favorable to diarrhœa; the rainfall prevented it. The facts for the present year justify the conclusion that rainfall is more important than temperature in relation to epidemic diarrhœa."

Dr. Herbert Peck, M. O. H. for Chesterfield (*Ibid.,* p. 655) is also of the same mind, for he ascribes the low death rate from diarrhœa in his district in 1902 in great part to the frequent showers. The amount of rain is of less importance than the number of showers, as is shown by a table of the rainfall for eight years. He concludes that frequent watering of the streets and roads in the more populous parts of the district would do much to prevent deaths from this cause.

[The first to call attention to the influence of rainfall on the death rate from diarrhœal diseases was Dr. E. W. Hope, who, in 1899, made known that at Liverpool during a period of twenty years the highest death rate occurred in the driest summer and the lowest in the wettest. The fourteen years in which the mean summer rainfall was 10.9 inches showed an average rate of about 50 per cent. higher mortality than the six wet years, with a mean rainfall of 13.8 inches for the corresponding months.—C. H.]

The Relation of Sulphur in Illuminating Gas to Air Vitiation.—The oppressive quality of air which is much vitiated by combustion of illuminating gas is the subject of an interesting contribution by Dr. J. S. Haldane (*Journal of Hygiene,* July, 1903, p. 382), who excludes the carbon dioxide produced by combustion and the attendant decrease in oxygen and increase in temperature as the causes thereof. The quantity of sulphur in ordinary gas is so small that his hypothesis that this substance is the cause of the unpleasantness may, he says, at first sight